

**ADMINISTRATIVE CASE NO. 385  
AN INVESTIGATION INTO FEES FOR FIRE PROTECTION SERVICES**

**PRELIMINARY STAFF REPORT ON WATER UTILITY  
RESPONSES TO COMMISSION'S INTERROGATORIES**

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## **INTRODUCTION**

On December 22, 2000, in response to a written request from the Kentucky Association of Fire Chiefs ("KAFC"), the Public Service Commission ("Commission") established Administrative Case No. 385<sup>1</sup> to investigate fire protection services of jurisdictional water utilities. This investigation had three stated objectives: (1) the collection of information about fire protection services of jurisdictional water utilities; (2) a detailed examination and analysis of this information to identify deficiencies or problems with the provision of such services; and (3) the development of uniform standards, if necessary, to correct these deficiencies. The Commission's ultimate goal was "to ensure that utility practices are not discouraging or preventing reasonable, cost-effective means of fire protection services."<sup>2</sup> .

When establishing this administrative proceeding, the Commission directed the 163 water utilities under its jurisdiction to provide certain information regarding their water systems, their fire protection services, and their position on key issues concerning the provision of such services. As of March 1, 2001, 73 water utilities have responded.<sup>3</sup> Because total compliance with the Commission's Order is necessary to ensure an accurate and complete view of fire protection services provided by jurisdictional water

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<sup>1</sup> Administrative Case No. 385, An Investigation Into Fees For Fire Protection Services (Ky.PSC. Dec. 22, 2000).

<sup>2</sup> Order of December 22, 2000 at 2.

<sup>3</sup> The names of these utilities are appended to this report. The Attorney General also responded, where appropriate, to the Commission's Interrogatories. His responses are included in the preliminary survey of responses. By its Order of December 22, 2000, the Commission also directed KAFC to respond to certain questions. As these questions differed from those posed to jurisdictional water utilities, KAFC's responses are not reflected in the preliminary survey.

utilities, Commission Staff will shortly begin canvassing the remaining utilities to obtain their compliance.

A preliminary survey of the responses to the Commission's interrogatories follows. Because some utilities did not respond to all interrogatories or gave multiple responses, the totals for each response may vary. Similar responses have been grouped together (e.g., "unsure," "don't know" and "no opinion") have been listed under one heading. Where feasible, the utility's complete response is shown. In some instances where the responding party provided a lengthy response, the response has been summarized. In some instances, a copy of the response in its entirety has been appended to this survey. While Commission Staff has sought to accurately summarize the responses, this survey is not intended to substitute for a review of each response.

### **SUMMARY**

Of the 73 responding water utilities, 47 utilities provide fire protection service,<sup>4</sup> 19 utilities do not provide such service, and 7 utilities limited their fire protection service to the filling of fire trucks.<sup>5</sup> The percentage of respondents not providing fire protection service, approximately 26 percent, is consistent with the percentage of water utilities who disclaim in their filed rate schedules any ability to provide fire protection service or fire flows. Approximately 28 percent of all responding utilities stated that they no longer

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<sup>4</sup> In its Order, the Commission defined "fire protection service" to include "permitting the installation of public or private fire hydrants or permitting local fire fighting entities to withdraw water from the water distribution system at no cost or at a reduced cost."

<sup>5</sup> See Order of December 22, 2000, Appendix B, Commission Interrogatory 1.

install fire hydrants because they are unable to meet the required water flow requirements.<sup>6</sup>

As to the amount of water attributed for fire protection purposes,<sup>7</sup> 30 utilities reported that the average expense was \$500 or less to provide fire protection for the 1995 through 1999 period. Twenty-eight respondents were unable to provide the necessary information. Several utilities complained of their inability to obtain accurate or timely usage information from local fire departments.

Where fire protection service is provided, it usually is in the form of public fire hydrants.<sup>8</sup> Forty-eight utilities reported having one or more public fire hydrants connected to their distribution systems.<sup>9</sup> Thirty-one utilities, or approximately 42 percent of the responding utilities, reported having 50 or more public fire hydrants. Twenty-four utilities, or roughly one-third of the responding utilities, had no public fire

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<sup>6</sup> Administrative Regulation 807 KAR 5:066, Section 10(2)(b) provides:

[F]ire hydrants may be installed by a utility only if:

- a. A professional engineer with a Kentucky registration has certified that the system can provide a minimum fire flow of 250 gallons per minute; and
- b. The system supporting this flow has the capability of providing this flow for a period of not less than two (2) hours plus consumption at the maximum daily rate.

<sup>7</sup> See Order of December 22, 2000, Appendix B, Commission Interrogatory 2.

<sup>8</sup> In its Order of December 22, 2000, the Commission defined public fire hydrants as “fire hydrants that meet the requirements of Administrative Regulation 807 KAR 5:066, Section 10(2)(b), and are maintained and operated at no cost by the water utility, or whose maintenance and operation costs are assumed and paid by a governmental entity (e.g., municipality, fire district, county government).”

<sup>9</sup> See Order of December 22, 2000, Appendix B, Commission Interrogatory 5a.

hydrants. In contrast, 54 utilities, or about three-fourths of the responding utilities, stated that no private hydrants were connected to their water distribution systems.<sup>10</sup> Seventeen utilities stated that private hydrants were connected to their water distribution system. Twenty-nine utilities reported that no sprinkler systems were connected to their systems. Forty-four utilities stated that at least one sprinkler system was connected to their systems.

Apparently few water utilities measure the quantity of water used for fire protection purposes.<sup>11</sup> Only 11 of the responding water utilities meter water usage from private hydrants. Only 21 of the respondents meter usage from private sprinkler systems. Four respondents meter usage from public fire hydrants. The majority of water used for fire protection is unmetered.

Of the utilities responding to the Commission's interrogatories, most do not assess a charge for water provided to public or private hydrants.<sup>12</sup> Of the 13 utilities that assess a fee for water service to public hydrants, eight assess a monthly or annual fee. Four of the water utilities charge only for water service in excess of four hours. Eight utilities assess an annual or monthly charge per private fire hydrant. Eleven utilities assess a minimum monthly charge for private fire hydrants based upon the meter size. Of the 44 utilities who responded to the interrogatories and who have at least one private sprinkler system attached to their systems, 18 assess the customer a

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<sup>10</sup> See Order of December 22, 2000, Appendix B, Commission Interrogatory 5b.

<sup>11</sup> See Order of December 22, 2000, Appendix B, Commission Interrogatory 6.

<sup>12</sup> See Order of December 22, 2000, Appendix B, Commission Interrogatory 8.

minimum monthly charge based upon the size of the water meter.<sup>13</sup> One utility assesses a charge based upon the size of the building in which the sprinkler system is located. None of the responding utilities has a special contract to provide fire protection service.

Of the 73 responding water utilities, only three reported fire events requiring the use of unusually large amounts of water.<sup>14</sup> The most significant of these events was a fire at a commercial landfill that required the use of 15,788,000 gallons of water. Neither the municipal fire department nor the property owner reimbursed the water district for the water used. As a result, the water district absorbed the loss of approximately \$19,111 in revenues.

Several utilities stated that standby costs associated with being ready and able to serve are much greater than the costs associated with hydrant installation. Forty-two respondents stated that those requesting private fire protection service should pay the total costs associated with the provision of such service. Most utilities stated that, with the exception of having additional points for water main flushing, they receive no benefit from the installation of private fire hydrants.

Because of the limited number of utilities providing private fire protection services and the wide variance in their cost of service, the responses provided no clear trend in the cost of providing such service. Several utilities expressed the fear that failing to

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<sup>13</sup> These utilities are: Adair County Water District, Boone County Water District, Bullock Pen Water District, Butler County Water System, Inc., Christian County Water District, Cumberland Falls Highway Water District, East Laurel County Water District, Farmdale Water District, Goshen Utilities, Inc., Grayson County Water District, North Manchester Water Association, Oldham County Water District, Pendleton County Water District, Simpson County Water District, Warren County Water District, West Laurel Water Association, and Wood Creek Water District.

properly allocate the cost of this service to those benefiting from the service would increase costs for all customers. Forty-two of the responding utilities, approximately 56 percent, stated that the cost of private fire protection service should be borne solely by the party receiving that service.

The majority of respondents acknowledged that a water utility would benefit from the installation of public fire hydrants because of the additional line flushing points such hydrants would provide. They noted that their customers would also benefit from lower fire insurance premiums and increased fire protection coverage. They saw few, if any, benefits accruing to them or the general public from the installation of private sprinkler systems.

Sixty-seven respondents, or 92 percent of the responding utilities, stated that no charge is assessed to fire departments for water service provided for fire protection services. Fifty-five utilities indicated that they do not assess any charge to fire departments for the placement, operation, and maintenance of fire hydrants.

Responding utilities were equally divided on the issue of who should bear the cost for water used to provide fire protection services. Twenty-six water utilities, 36 percent of the respondents, indicated that the cost should be borne by all customers. Fifteen water utilities, 21 percent of the respondents, stated that the customer who receives the benefit of the water should pay its cost. Eleven utilities, 15 percent of the respondents, indicated that charges should be assessed for the water if the fire department providing the fire protection service is financed through tax revenues or membership contributions.

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<sup>14</sup> See Order of December 22, 2000, Appendix B, Commission Interrogatory 9.

## **RECOMMENDATIONS**

Based upon its review of the responses to the Commission's Order of December 22, 2000, Commission Staff recommends that efforts be undertaken to obtain a greater level of compliance with that Order and that all water utilities that have yet to respond to the Order should be canvassed. Additional attention should be directed to the pricing mechanisms of those utilities that provide private sprinkler service. Depending upon the response of the remaining water utilities, it appears that the concerns of the KAFC, as they relate to jurisdictional water utilities, may be localized. Given the wide disparity in how some fire protection services are provided, the Commission may wish to consider the development of general rules regarding some aspects of the provision of that service. Such action, however, should not be taken until a full canvassing of jurisdictional water utilities is completed.

## APPENDIX A

### **UTILITIES RESPONDING TO THE COMMISSION'S ORDER OF DECEMBER 22, 2000**

Adair County Water District  
Allen County Water District  
Boone County Water District  
Bullock Pen Water District  
Butler County Water System, Inc.  
Carroll County Water District  
Cawood Water District  
Center Ridge Water System  
Christian County Water District  
Consumers Water District  
Cumberland Falls Highway Water District  
Dewitt Water District  
Doe Valley Association, Inc.  
East Casey County Water District  
East Clark County Water District  
East Knox Water District  
East Laurel Water District  
East Pendleton Water District  
Edmonson County Water District  
Fancy Farm Water District  
Farmdale Water District  
Garrard County Water Association, Inc.  
Goshen Utilities, Inc.  
Grayson County Water District  
Green River Valley Water District  
Green-Taylor Water District  
Hardin County Water District No. 2  
Harrison County Water Association, Inc.  
Hyden-Leslie County Water District  
Jackson County Water District  
Larue County Water District No. 1  
Laurel County Water District No. 2  
Magoffin County Water District  
Marion County Water District  
McCreary County Water District  
Morgan County Water District

Mountain Water District  
Muhlenberg County Water District  
Nebo Water District  
Nicholas County Water District  
North Manchester Water Association, Inc.  
North Marshall Water District  
North Nelson Water District  
Northeast Woodford County Water District  
Northern Kentucky Water District  
Ohio County Water District  
Oldham County Water District  
Parksville Water District  
Peaks Mill Water District  
Pendleton County Water District  
Rattlesnake Ridge Water District  
Sandy Hook Water District  
Sharpsburg Water District  
Simpson County Water District  
South 641 Water District  
South Anderson Water District  
South Hopkins Water District  
South Shore Water Works Company  
South Woodford Water District  
Southeast Daviess County Water District  
Spears Water Company, Inc.  
Todd County Water District  
Trimble County Water District  
Utilities of Kentucky, Inc. (Clinton)  
Utilities of Kentucky, Inc. (Middlesboro)  
Warren County Water District  
West Carroll Water District  
West Daviess County Water District  
West Laurel Water Association, Inc.  
West McCracken County Water District  
West Shelby Water District  
Wood Creek Water District

Question 1. Does the water utility provide fire protection service?	
Yes	47
No	19
To fill fire trucks only	7

Question 2. For each calendar year since 1995, state the amount of water (in gallons) used for fire protection or fire fighting services and the percentage of the utilities' total water production that this use represents.

Question 3. For each calendar year since 1995, state the cost of water used for fire protection or fire fighting services in total dollars.

Forty-five of the respondents were able to report the amount of gallons used and revenues collected from fire protection or fire fighting services. The following chart provides a breakdown of those responses according to the averages of each utility for the 1995 through 1999 period.

Gallons		Dollars	
More the 5 Million	2	More than \$50,000	1
1,000,001 to 5 Million	5	\$10,001 to \$50,000	1
500,001 to 1 Million	2	\$5,001 to \$10,000	1
300,001 to 500,000	1	\$3,001 to \$5,000	2
200,001 to 300,000	4	\$2,001 to \$3,000	1
100,001 to 200,000	10	\$1,001 to \$2,000	3
50,001 to 100,000	7	\$501 to \$1,000	0
10,000 to 50,000	8	\$100 to \$500	18
Less than 10,000	6	Less than \$100	12

One utility noted that there should be a requirement that fire departments report water usage to the proper utility. This utility complained that the fire department does not supply usage information which prohibits the utility from making accurate periodic water production reports to the state regulatory agencies. In addition, the utility said that the lack of water reporting by the fire department hampers efforts by the utility to adequately monitor the amount of water lost through system leaks.

Another utility complained about the lack of cooperation from the fire departments in supplying water usage data. The utility said that when its employees learn that a fire has occurred or that the fire departments are practicing, then reviews are made of master meter readings in order to try and estimate the amount of water used by the fire department. The utility wants the fire departments to directly report water usage to the utility so that they can properly account for the actual amount of water used for fire fighting services.

Question 4. Describe the types of facilities (eg., fire hydrants) that are designated for public fire protection.	
Hydrants	50
None	15
Flush hydrants	12
Hydrants, 4" and larger mains, pumping stations, control valves and tanks	3
Fire plugs	
Outlets	

Question 5. A. How many public fire hydrants are connected to the water utility's distribution mains?	
0	24
1 - 50	17
50 - 100	12
100 - 200	7
200 - 300	4
300 - 400	3
400 - 500	1
615	
1334	
3163	
7882	
Blow off only	434

Question 5. B. How many private fire hydrants are connected to the water utility's distribution mains?	
0	54
1 - 10	7
11 - 20	3
20 - 50	3
70	
87	
304	
Unknown	

Question 5. C. How many private sprinkler systems are connected to the water utility's distribution system?	
None	29
1	7
2	3
3	4
4	8
5	2
6 - 10	8
12 - 20	4
25 - 30	4
73	
200	
325	
553	
Unknown	

Question 6. A. How does the water utility measure the amount of water provided to a private fire hydrant?	
Not applicable	43
Estimated	19
Metered	11
Most metered a few not metered	2
Question 6. B. How does the water utility measure the amount of water provided to a private sprinkler system?	
Not applicable	30
Estimated	21
Metered	21
Charge by square foot of building	
Metered if installed after 1997	
Question 6. C. How does the water utility measure the amount of water provided to a municipal, county, fire district and volunteer fire departments through public fire hydrants?	
Estimated by fire department	52
Not applicable	14
Metered	4
Hydrant testing equipment	
Not measured - not billed	
Unknown	
Unplanned use is estimated, planned use is metered	
12 of the respondents stated that they are unable to obtain reports from the fire departments.	

Question 7. A. If private sprinkler systems are connected to the water utility's distribution system, is their water usage metered?	
Not applicable	27
No	23
Yes	21
Some are metered	3
Question 7. B. If their water usage is metered, what type of metering device or arrangement is used?	
Not applicable	50
Water meter	21
Fire line meter	2
Meter sized for proper flow of sprinkler system	

Question 8. A. (1) What is the rate that the water utility assesses for water service to public fire hydrants?	
No charge	46
Not applicable	15
Usage in excess of 4 hours billed to property owner	4
\$50 annually	2
\$3.33 per hydrant	2
\$3.00 per hydrant	
10.41 per hydrant	
100 per month	
720 annually	
\$1.31 per 1,000 gallons	
Question 8. A. (2) What is the rate that the water utility assesses for water service to private fire hydrants?	
Not applicable	53
Normal rate depending on meter size	11
\$15 per month	2
\$50 annually	2
10.45 per month	
\$7.50 per month	
Question 8. A. (3) What is the rate the water utility assesses for water service to private sprinkler systems?	
Not applicable	29
Based on meter size	18
No charge	16
\$15 per month	2
\$25 per month	
\$32 per month	
\$10.45 per month	
\$10 per month	
\$5.16 per 1,000 gallons	
.0015 per square foot of building space per month	
3" - \$20, 4" - \$25, 6" - \$30, 8" - \$40	

Question 8. B. If any of the rates listed in response to Item 8 (a) are the result of special contracts, provide a copy of each special contract.	
Not applicable	73
Reserve the right to enter into special agreements	1
Question 8. C. Explain how each rate listed in response to Item 8 (a) was derived. State all assumptions that were used to derive the rate.	
Not applicable	47
PSC approved the rate	16
Based on meter size	3
Maintenance, inspecting, testing and replacing	2
Wholesale rate	
Unable to determine	
The most significant cost to be recovered for fire protection services are water capacity costs and not the cost of water used. The capacity costs should be recovered by means of an annual ready to serve charge for each public hydrant. A ready to serve charge would be inclusive, so that there would be no additional charge for water usage or for maintenance of public fire hydrants. It would be appropriate to impose some reasonable time limits on the amount of water used for fire hydrant testing and training purposes.	

Question 9. List and describe each incident since 1985 where the utility provided unusually large amounts of water to a fire department for fire fighting purposes. For purposes of this question, "unusually large amounts of water" means that the water utility provided water at fire flow rates (250 gallons of water per minute) for greater than four consecutive hours. For each incident, state the effect that the provision of such service had on the utility's financial condition and on the quality of service provided to its customers.	
None	63
Information not furnished by fire departments	4
Lowered water pressure	
Occassional low pressure due to fires	
One incident caused tank to drain	
School used 150,000 at a cost of \$180, occurred when demand was low so no impact on pressure. Tire dump used 170,000, cabinet shop used 150,000 and Clifford house used 60,000. Not a significant impact on finances but caused low pressure for a few hours.	
None - however, one customer used a private fire system to fill and maintain a large lake. Customer used over 13,000,000 from June to October 2000. Was metered and customer had to pay.	
1994 commercial landfill site, fire department used 15,780,000 gallons then in 1999 2,797,336 was used. Lost revenue was \$19,111. City refused to pay and property owner refused since he paid city taxes. District took loss.	
Claudia Sanders dinner house in 1999, 500,000 gallons was used - no major impact on financial condition of utility.	

Question 10. How much water storage capacity, in the water utility's opinion, must be reserved to support the use of fire hydrants?		
Question 11. How much water storage capacity, in the water utility's opinion, must be reserved to support the use of private sprinkler systems?	Capacity for Hydrants	Capacity for Sprinklers
Not applicable or no opinion - 39 respondents		
7 respondents	50,000	50,000
2 respondents	150000	100000
	400000	400000
	1000000	500000
	1200000	1200000
	50%	50%
	75%	75%
2 respondents	5%	1%
2 respondents	50%	20%
	20%	20%
	1%	<1%
Rely on PSC regulations		
3 respondents stated that it depends on contractual arrangements for sprinkler systems.		
Rely on supplier		

4 Respondents stated in part that the volume of water reserved in a storage tank for fire hydrants is related to two factors. Total volume of water needed to suppress a particular fire which varies with the required flow rate and duration. Typical flow rates are 250 gpm in a rural residential area to 2,500 gpm in an industrial park. Depending on location and type of development the volume reserved varies from 30,000 to 300,000 gallons. The second factor relates to the capacity of the tank that must be reserved to maintain a water level which provides acceptable water pressure at the hydrants. The normal operating ranges in our tanks are typically above the levels of 60-80% of capacity so that the appropriate pressure will be available throughout the duration of the fire.

One utility recommended that the Commission regulation requiring 250 gallons per minute for a period of not less than two hours plus "consumption at the maximum daily rate" be revised to state "consumption at the average daily rate for the utility" which would require adequate storage capacity.

Because a large sprinkler system may require more water capacity than a fire hydrant, the regulation setting forth water capacity requirements should also address water capacity requirements for sprinkler systems. The private sprinkler demand requirement would be the gallons per minute rating of the largest sprinkler system, measured for a fixed period of time generally considered appropriate for a sprinkler system to effectively control a fire in most circumstances.

Question 12. What is the minimum size for a water main to which a fire hydrant should be connected?	
6"	50
4"	8
No opinion or unknown	8
PSC regs	3
Size needed to maintain flow rate and pressure	2
2"	
8"	
8" unless near dead end then 6"	
Question 13. What is the minimum size for a water main to which a private sprinkler system should be connected?	
6"	28
No opinion or unknown	18
Case by case basis depending on pressure, flow rating, storage and capacity	12
4"	11
2"	2
8"	
3/4 to 1"	
Determined by engineer	

Question 14. A. If the water utility requires or uses a meter to measure the water usage of a private fire protection system, (1) For each meter size that the water utility uses with a private fire protection system, (a) state the average cost of installation of a private fire protection system and (b) provide a breakdown of the average cost of installation by major cost components.	
\$250 C&G wet tap, 342 valve, 364 labor, 270 sleeve, 24 box	\$1,250
4 respondents stated:	
4" Meter assembly \$4,500, vault 3,000, and piping 2,700	10,200
6" Meter assembly \$7,500, vault 3,200, and piping 2,900	13,600
8" Meter assembly \$9,700, vault 3,400, and piping 3,300	10,400
10" Meter assembly \$13,850, vault 3,600, and piping 4,000	21,450
1" Parts \$400, overhead 300	700
1.5" Parts \$800, overhead 400	1,200
2" Parts \$3,000, overhead 700	3,700
3" Parts \$4,100, overhead 900	5,000
6" Labor \$1,412, parts 16,829	18,241
4.5" hydrant, \$755, valve 342, labor 700, misc. 200, wet tap 250	2,247

Question 14. A. (2). State the average monthly usage of private fire protection systems	
Not applicable	59
Metered with regular water usage	11
5667	
12,300	
118,800	
1,588,878	

Question 14. B. (3). Identify the actions that the water utility must take to operate and maintain a private fire protection system. For each action listed, state the annual cost to the water utility to perform.	
Do not maintain	66
Cost is dependent on the potential fire fighting demands ranging from 250 to 2500 gpm. Backup facilities constitute a larger share of the costs than direct costs such as fire meter assemblies.	3
If private fire protection systems were allowed to connect without meters costs incurred would include the unauthorized use of water, leaks on private lines, no recovery of water costs, no recovery of the cost of construction and financing on the system designed to provide the protection, higher costs for leak detection and all water accountability tasks. Commercial and industrial customers have in the past made improper connections to private fire protection systems in order to fill lakes, water lawns and other purposes.	3
Check for leaks, replace hydrants (2 respondents)	\$100
Inspections and repairs	\$1,246
Leak check, lubricate, paint and repair	\$25
Larger tanks and increases in line size	
Inspection, meter reading, pressure testing	\$60
The American Water Works Manual M1 recognizes that utilities providing private fire protection incur significant "standby" costs and provides methods for including the costs of operating and maintaining the facilities needed to provide an adequate water supply in the event of a fire. Cost of private fire protection service must include the appropriately allocated share of backup facilities such as transmission and distribution mains, storage facilities, and pumps. According to the AWWA, these backup facilities normally constitute a much larger share of the cost of providing private fire protection service than the direct costs related to private fire protection service such as fire-meter assemblies.	3

<p>If the water district is required to maintain a certain level of water in its storage tanks, then the size of the tanks would need to be large enough to take care of the domestic use, plus an ample amount of reserve. Also the treatment plant operator could possibly be scheduled for longer days in order to treat the water when needed if there is not enough storage in the clearwell.</p>	
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<p>If the customer is required to design his service so that they can accept the pressure and volume that the water district can supply, then there is not a cost to the water district. Maintenance to fire hydrants is another point of disagreement between fire departments and the water district. In our case, the fire hydrants are installed by fire departments, developers, private individuals for use for gravity filling fire trucks only. We do not have the money for the repair and maintenance of these hydrants. We thought that since the fire departments were saving time and money, that the maintenance should be paid by them using money collected from their fire dues. However, if it becomes necessary for the water district to do the repair and maintenance then the district should be able to charge by some means to recover the cost. Most of the repair to hydrants would not be necessary if the hydrants were operated properly.</p>	
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Question 14, b.1.(a)(b). State the average cost of installation of a private fire protection system. Provide a breakdown of the average cost of installation by major cost components.	
Installation paid for by applicant	7
Cost of meter	5
2 respondents stated: Valve - 260, equipment - 220, hydrant - 800, labor - 220	1,500
\$800 parts, 700 for labor	1,500
\$755 hydrant, 300 valve, 160 backhoe, 300 labor, 200 misc.	1,710
\$755 hydrant, 342 valve, 250 wet tap, 100 labor, 200 misc.	2,247
\$150 saddle, 550 hydrant, valve 175, box 39, engineering 750 and 500 to tap outside service	2,500
Hydrants, joints and valve	3,000
\$900 engineering, 1,900 material, 1,200 labor	4,000

Question 15. What costs, if any, would your water utility incur with the connection of private fire protection systems to its water distribution system?	
Costs would be paid by individual requesting service	37
Not applicable	14
Don't know	6
Actual cost	4
Would need major upgrades	3
\$18,000 for 6" connection plus \$40 per month in maintenance	2
Increased labor	2
Maintenance and testing	2
Additional capacity	
\$5,625,334 to upsize mains	
If private fire protection systems were allowed to connect without meters costs incurred would include the unauthorized use of water, leaks on private lines, no recovery of water costs, no recovery of the cost of construction and financing on the system designed to provide the protection, higher costs for leak detection and all water accountability tasks. Commercial and industrial customers have in the past made improper connections to private fire protection systems in order to fill lakes, water lawns and other purposes.	3

Question 16. Should private fire protection service rates be based upon the cost of such service without any subsidization from general customers? Explain.	
Cost should be borne by individual requesting service and not be subsidized.	42
Not applicable	12
No opinion	10
Yes - subsidized by state if necessary	
Same rate since fire department is a taxable district	
Costs are minimal and benefits outweigh costs	
Yes - subsidized by state if necessary	
Yes - commercial and industrial customers are the ones who are interested in private fire protection and utilize the service. The reason most all private fire protection systems are installed is the result of Building Code and insurance company requirements for commercial and industrial property. The general customer base receives no benefit from private fire protection installations and therefore should not be burdened with the cost of providing such service. The purpose of private fire protection facilities is to enhance the protection available to the individual property owner on which the facilities are located. Such facilities do not protect the property of any other customer. The premise of cost of service rates is to allocate expenses of the utility to those customers or groups of customers that benefit or cause the cost. The general customer base should not subsidize private fire protection service because water customers in general do not benefit or cause the costs associated with the service.	3
Private business should be required to pay for the installation of their fire protection system in lieu of a connection fee. Also that the private business should be required to install a pump and holding tank, if necessary to operate their system. We feel there will normally be no water usage. When there is a fire and the system is used the private business should with the assistance of the fire department estimate the amount of water used and pay for that amount according to the regular rate schedule. If a reserve amount of water or a certain pressure is required of the water district, then a monthly fee should be charged accordingly based on actual cost to the district.	

16. Should private fire protection service rates be based upon the cost of such service without any subsidization from general customers? Explain.

#### RESPONSE

KRS 278.170(3) specifies in part that a utility "may grant free or reduced rate service for the purpose of fighting fires or training firefighters to any city, county, urban-county, charter county, fire protection district, or volunteer fire protection district." KRS 278.172 further provides that "every utility which serves a volunteer fire department or other entity eligible for aid under KRS 95A.262 shall supply such service at the lowest rate available under its tariffs to customers with comparable consumption amounts, including residential or farm rates."

Thus, public policy concerning public fire protection favors the provision of water at the most favorable terms available. These statutes do not expressly extend this policy to matters concerning private fire protection; therefore, the general statutory charge for rate design provides the guidance for private fire service rates.

KRS 278.170(1) mandates the following.

"No utility shall, as to rates or service, give any unreasonable preference or advantage to any person or subject any person to any unreasonable prejudice or disadvantage, or establish or maintain any unreasonable difference between localities or between classes of service for doing a like and contemporaneous service under the same or substantially the same conditions."

As with any utility rate-design process, the cost of service study is the starting point.<sup>1</sup> KRS 278.170(1) contemplates the application of pragmatism to the rate-design process by permitting the utilization of some preferences or advantages. Consequently, subsidies do exist, and there may be instances wherein the utility may not apply a strict cost of service approach to determine the rates for private fire protection.

The effort of departing from the cost of service must, nonetheless, find a basis in a legitimate rate-making principle such as gradualism or prevention of rate-shock. The deliberate departure from cost of service absent a generally accepted and clearly articulated rate-making principle runs contrary to KRS 278.170 when the departure results in one group of customers subsidizing a material benefit to another group of customers. If the legislature wishes to address this issue, it may. Absent a statutory mandate such as KRS 278.170(3) or KRS 278.172, the utility may not call upon the general customers to indefinitely subsidize a material benefit for the customer group receiving private fire protection service. Without question, the utility should not extract a premium from private fire service customers to provide a material benefit to the "general" customer base. Likewise, the same is true in reverse.

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<sup>1</sup> The Attorney General will point out that there is a subjective nature to cost of service studies. Thus, the same set of facts may support more than one cost of service study that can be found to be reasonable. This response contemplates a situation where there are no issues relating to the proper assignment of costs in the cost of service study.

Question 17. A. What benefits may result to the utility from its installation of public fire hydrants?	
Additional line flushing	33
Not applicable or no benefits	24
Public perception	10
Fire protection	4
None - liability to the utility	4
Flow tests	3
Maintenance on system	2
Benefit only property owners	
Blow off line, clean and find leaks	
Sampling	
<p>All customers may be unable to benefit from having fire hydrants within a reasonable distance of their property due to the hydraulics of a system. There is a great liability and cost in keeping the water system in condition to always assure flows are available for fire fighting, meeting state and local requirements and the continuous policing to curtail theft of water by farmers, contractors and others. There is a minor benefit in having points to flush the distribution system should a water main failure occur.</p>	

Question 17. B. What benefits may result to the public from the utility's installation of public fire hydrants?	
Lower fire insurance premiums	46
Increased fire protection	31
Not applicable	10
Fresh water as a result of flushing	7
Fire departments would benefit	2
Line maintenance	
Less water usage	
Pressure testing	
Who would pay?	
Public buildings and factories	
Decrease insurance rate but increase water rates due to more storage required.	
Aside from the obvious fire protection benefits, the availability of public fire hydrants in conjunction with the fire departments meeting <u>other</u> Insurance Service Office rating requirements <u>may</u> reduce property owners insurance premiums.	

17. a. What benefits may result to the utility from its installation of public fire hydrants?

b. What benefits may result to the public from the utility's installation of public fire hydrants?

#### RESPONSE

17(a) The General Assembly demonstrates a preference favoring the installation of public fire hydrants. Through KRS 74.415(1), the General Assembly grants the commissioners of a water district and the governing body of a water association the discretion to determine questions concerning the installation of fire hydrants on new or extended water lines. The General Assembly expressly fetters the exercise of discretion by requiring that "the commissioners or governing body *shall not* eliminate fire hydrants from new or extended water lines *unless* they determine that hydrants are not feasible (emphasis added)." KRS 74.415(1); also see KRS 96.150(2) (A city may extend water lines which are incapable of supporting fire hydrants only upon a determination that servicing the hydrants is not feasible.); and further see KRS 75.080 (The trustees of any fire protection district may cause the erection of fire hydrants to the water pipes in the public ways). Thus, public policy in Kentucky favors the installation of fire hydrants, and it should be read to apply to all utilities.

Providing benefits to utilities is not the primary focus of the General Assembly's policy relating to fire hydrants. By requiring a feasibility analysis, the General Assembly affords public utilities subject to KRS 74.415, a means of protection from net impairment or net detriment from the installation of hydrants. Consequently,

compliance with public policy is the primary benefit to the utility that results from the installation of fire hydrants pursuant to a determination of feasibility.

17(b) The potential public benefits resulting from the installation of fire hydrants include the enhancement of fire fighting capabilities and fire protection measures as well as favorable impacts on fire insurance coverage and premiums.

Question 18. A. What benefits result to the public from the installation and use of private sprinkler systems?	
Benefits private - none to the public	24
Not applicable or no opinion	16
Better fire protection	13
Lower insurance premiums	12
Safety	12
Less water used	3
Assists private business in meeting OSHA laws	
Question 18. B. What benefits result to the utility from the installation and use of private sprinkler systems by customers on its water distribution system?	
None	30
Not applicable or no opinion	16
Conserve water	12
Revenue from use	7
Growth	
Problems occur such as leaks, unauthorized usage and potential health hazards	
Liability of utility increased	
Installation and use of private sprinkler systems only benefits the individual property owner and has no direct benefit to the general customer population. Private fire protection provides a measurable benefit to the property being served improving control over fires, decreasing injury to personnel, decreasing property damage, and may reduce annual insurance cost. The cost of private fire protection should be paid by those customers receiving the benefits of private fire protection service. The only benefit to the utility for sprinkler systems is generation of additional revenue to offset the cost of the water mains, tanks, pumps and other apparatus necessary to provide the high flows required.	3

18. a. What benefits result to the public from the installation and use of private sprinkler systems?

b. What benefits result to the utility from the installation and use of private sprinkler systems by customers on its water distribution system?

#### RESPONSE

18(a) The potential benefits to the public include enhancements to overall public safety and the more efficient utilization of resources.

18(b) The potential benefits to the utility include an improvement in the amount of water that is utilized in responding to fires. Conventional wisdom suggests that a private sprinkler system will use less water than a hydrant in a fire-fighting situation. Thus, private sprinkler systems may assist the utility in promoting the efficient use of water.

Question 19. Does the utility currently assess a fee for water service even if the customer has no water usage during the billing period? If yes, describe how this fee was determined.	
Yes - a minimum bill	33
No	15
Yes - based on meter size	10
Not applicable	6
For water but not for fire protection	6
Yes - sprinklers are \$25	
Customer charge	2

Three utilities stated:

Minimum bill charges are based on size of meter service that is requested by each customer regardless of whether the connection to the Water District is to be used for residential, commercial, industrial or private fire protection. The minimum bill is set forth in the Water District's standard rate schedule as approved by the PSC. Revenue from minimum bill charges helps cover expenses that are incurred by the utility even if no water is used by the customer.

Fire protection service is considerably different from service provided to other types of customers. The utility must be ready to deliver relatively large flow rates for short periods of time thereby consuming relatively small quantities. The costs to the utility for this high flow rate service are substantial. Capital costs associated with large diameter mains, pumping stations, storage tanks and other water system facilities comprise the most significant expenses included in minimum bill charges.

Also, certain operation and maintenance expenses associated with these facilities make up a substantial portion of the minimum bill. It is appropriate that these expenses be charged to private fire protection services because the needed facilities are available even though the customer may never actually use the service. The minimum bill also helps recover customer costs which are expenses associated with servicing customers, irrespective of the amount or rate of water use.

The Water district has financed several capital improvement projects through the United States Department of Agriculture and one of the federal government requirements has been to adopt a Loan Resolution that requires "No free service or use of the facility will be permitted." Allowing private fire protection customers the use and benefit of public water system facilities without paying the minimum bill would certainly violate this requirement of the Loan Resolutions.

Paying a minimum bill for private fire protection service can be considered analogous to an insurance policy premium that this paid on a regular basis even though the customer may never file a claim. It is well documented in publications dealing with water rates that charges such as the Water District's minimum bill for standby private fire protection service are fair, appropriate and justified. However, if KAFC members have concerns that these charges might discourage installation of private fire protection systems, there is a very straightforward solution. These members should encourage their respective local governments to enact ordinances requiring the private fire protection systems in certain buildings.

Capacity Costs. The most significant costs to be recovered for fire protection services are its water capacity costs, and to the cost of water.

Question 20. Does the utility charge fire departments operating within its service area for the placement, operation or maintenance of fire hydrants?	
No	55
Placement only	7
Do not install	7
Yes	
County government authorizes fire department to contribute	3
Yes - fire department pays for the installation and for the \$50 fee for maintenance from tax money	
Yes - maintenance paid by fire department	
Fire departments or property owners install at their own expense. We furnish the water and hydrants are only to be used to gravity fill trucks.	

Question 21. A. Does the utility assess a fee or charge to the fire departments operating within its service area for water used for fire fighting or fire training purposes?	
No	67
Fire department does not notify of usage	4
No charge if less than 4 hours usage	3
Yes	3
Question 21. B. (a). State the fee or charge	
\$25 per month	
\$50 per hydrant annually	
Minimum rate for meter size	
Question 21. B. (b). Explain how the fee or charge was determined.	
Tariffed rate	2
Standard rate	
Question 21. B. c. State whether the fee or charge is set forth in the utility's filed rate schedule.	
Yes	3

Question 21. C. If no, state whether the utility's filed rate schedules require the fire department to maintain estimates of the amount of water used for fire protection and trainings, and to report this water usage to the utility on a regular basis.	
No	18
Not in tariff but fire department reports	16
Yes	15
In tariff but fire department will not report	12
Not in tariff and fire department will not report	4
Fire department reports	3
Not applicable	3
No means of enforcement	1

Question 22. Who should bear the cost of water used for fire protection purposes (e.g., all utility customers, owner of property where fire occurs, the fire department)? Why?	
All customers should pay for public fire protection	26
Customer who receives the benefit should pay	15
Fire dept. if a taxing district	9
No opinion or unsure	8
Everyone unless duration is over 8 hrs. then property owner	4
Everyone unless duration is over 4 hrs. then property owner	3
Minimal usage	2
Not applicable	2
Depends on funding of fire department	
Insurance companies	
In our area the fire departments charge membership fees to homeowners. If you are not a member you have to pay the fire department for services rendered, if you have a fire. The fire departments are supported by taxes! Customers should not have to pay to support the fire departments twice!	

Costs Recovered by "Ready to Serve" Charge to Fire Department. The capacity costs incurred to be able to provide water service for fire protection purposes when needed, should be recovered by means of an annual "ready to serve" charge for each public fire hydrant in the service area. A "ready to serve" charge would be inclusive, so that there would be no additional charge for water usage or for maintenance of public fire hydrants. It would be appropriate to impose some reasonable limits on the amount of water used for fire hydrant testing and training purposes.

Revenue - Cost Correlation. The charge for water service should be reasonably correlated to the costs involved with providing such service. A charge to the fire department for the amount of water used for fire protection may not accurately correlate to the costs incurred because the principal costs involved are related to water capacity requirements. A "ready to serve" charge is more accurately correlated to the costs incurred to fulfill its water capacity requirements for fire protection services.

Fire Department is a Taxing Authority. The fire department is a taxing authority, and presently collects a property tax to provide for the costs involved with fire protection services. The cost of the services provided by the fire department should reflect the actual costs of the services provided, including the "ready to serve" charges (which would include water used for fire protection services and maintaining public fire hydrants).

Inappropriate to Socialize Costs to Ratepayers. The cost of water capacity incurred should not be "socialized" by increased rates to water customers:

- (1) If such costs are "buried" in water rates, customers do not have an accurate understanding of the actual costs involved for providing fire protection service.
- (2) "Fairness" is better served by generating revenue to provide for fire protection costs using a property tax assessment, rather than an increased water tariff. The value of fire protection services is, arguably, proportionate to the value of the property protected. In other words, the owner of an expensive residence should be required to pay proportionately more for fire protection services because that owner has more value to protect. (The owner of an expensive residence may also receive a greater reduction in casualty insurance premiums as a result of fire protection services.) Water usage at a residence is frequently not well correlated with the value of the property. A large and expensive home may be occupied by two individuals, who have modest water consumption. A smaller home may be occupied by a family including several children, who consume considerable water. Fairness suggests that a property tax assessment would be a fairer method to generate revenues to provide for the costs of fire protection services.

Water used to fight fires from "public fire hydrants" is generally used or available to all customers and some non-customers (property owners without water service) of the Water district. Most all fires are of short duration, less than four hours. Limited information is provided on the use of water from small, routine fires making it difficult to account for the water and bill for the amount used. Thus the decision was made not to bill customers for water used on a fire lasting shorter than four hours.

On the other hand, fires lasting longer than four hours would use a lot of water and generally there would be media coverage of the fire, which would increase the knowledge to the Water District. Higher water usage for fires of four hours duration would make it easier to determine the water used in comparing the water transported into the pressure zone where the fire occurred and comparing that water with the normal sales to estimate the amount of water used for fighting a particular fire. Thus it would be fair, just and reasonable to expect the property owner who benefited from the use of the water used to fight the fire to pay for that water.

Water used for "private fire protection" should be paid for by the property owner who is benefiting from the use of the water. Water is used by private fire protection systems as a result of leaking private fire mains and fire hydrants along with the water used for testing, filling and flushing pumps, tanks and other equipment. Taps and other irregular connections are sometimes made and water is used from private fire protection systems for things other than the intended purpose. The water used by private fire protection systems only benefits the one property owner and should be paid for by the individual property owner. It is impossible to acquire access and sufficient staff to monitor and control private fire protection facilities.

22. Who should bear the cost of water used for fire protection purposes (e.g., all utility customers, owner of property where fire occurs, the fire department)? Why?

#### RESPONSE

The appropriate answer will vary from utility to utility. For example, per KRS 75.180(2), in a fire protection district the owner of property where water is used for firefighting shall be reimbursed in a reasonable amount by the fire protection district board for water used. Clearly, this statute reflects the public policy that individual owners of property in a fire protection district should not have to pay for water used to combat a specific fire.<sup>2</sup> The individual property owners fund the fire protection district through a tax mechanism. Consequently, in such scenarios, the responsibility for bearing the cost of water for a specific fire falls upon the fire protection district. This is a statutory scheme, and the Public Service Commission is without jurisdiction to create a contrary result.<sup>3</sup>

There are, furthermore, a variety of different scenarios where KRS Chapter 75 (Fire Protection Districts) does not resolve the issue of who should bear the cost. Thus, again, the appropriate mechanism for assigning costs will depend upon the unique set of facts and corresponding statutes for each situation. Therefore, at this stage it is not clear that a per se rule for assigning costs is legally possible or wise.

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<sup>2</sup> Compare this statutory mandate to KRS 75.460.

<sup>3</sup> Because the owner of the property may not elect to apply for reimbursement pursuant to KRS 75.180(2), the Attorney General does not take the position that a utility may not bill the individual property owner for water used to fight a fire.

Question 23. What actions does the water utility take on a periodic basis to ensure that all fire hydrants are connected to water distribution mains that are capable of handling fire flows? How often are these actions taken?	
Annual flow tests	13
Fire department and utility check	13
Hydrants for flushing and testing only	11
Flushed twice annually	10
Flow tests	7
Hydraulic analysis	6
As needed	5
Not applicable	3
None	2
No policy	
Flow rate checked every 90 days	
Checked and color coded for flow rate	

Question 24. A. What are the water utility's policies regarding the placement of fire hydrants?	
Do not install - will not meet PSC requirements	21
Engineer must certify	9
No policy	7
Applicant pays	6
Flush hydrants only	6
6" main and PSC regulations	3
Within 1,000 feet of structure	2
Meet flow requirements, PSC regulations, easily accessible, public place to discourage theft and in a strategic location	2
PSC regulations	2
6" main	
6" main and applicant pays	
Depends on pressure	
Discourage	
End of main lines in subdivisions	
Every 2,000 feet if pressure permits	
Fire code, city ordinance and PSC regulations	
Fire department must approve	
Flow test, 6" main and cost paid by applicant	
Populated areas	
No funds to install	
Expansion project, local government provides funding and PSC standards	

Question 24. B. What studies or analyses does the utility conduct prior to ruling upon requests for fire hydrants?	
Certified by an engineer	23
Flow and pressure checks	21
Not applicable	15
Follow PSC regulations	4
Hydraulic analysis	4
None	3
Do not install	2
Determine who will pay	2
Population of area	2
Only set during construction	
Within 1,000 feet of the structure	

Question 24. C. Under what circumstances will the water utility install a fire hydrant?	
Not applicable or none	23
Meets engineering specifications, applicant pays cost or utility obtains grants	13
Engineer certifies	8
Certified by an engineer and applicant pays	5
Flush hydrants only	4
Installs during main construction	3
Applicant pays for hydrant and specifications are met	2
Do not install	2
All new development required to install hydrants per planning commission	2
Requested by fire department	2
No policy	2
Per PSC regulations	2
Within 1,000 feet of structure	
6" mains and PSC regulations	
Easement signing incentive, requested by money lending agency, requested by fire department	
High elevation and large mains	
Pressure adequate and need is determined	
No cost to utility, meets specifications, approved by engineer and the district does not incur legal liabilities	
Government requires, adequate flow and pressure	